



RESILIENT RHODY

AN ACTIONABLE VISION FOR ADDRESSING THE
IMPACTS OF CLIMATE CHANGE IN RHODE ISLAND

EC4 Progress Update
9/30/21

Resilient Rhody Overview



RESILIENCE THEME:
Natural Systems



RESILIENCE THEME:
Community Health
and Resilience



RESILIENCE THEME:
Emergency Preparedness



RESILIENCE THEME:
Critical Infrastructure
and Utilities

Resilient Rhody Outcomes:

- Established **key climate resilience focus areas** to drive implementation
- Identified **61 cross-agency actions** and goals
- **Recognized need to support municipalities** in driving local and state resilience

Resilient Rhody Implementation

- **\$20 million in new funding** for climate resilience projects has been secured since Resilient Rhody release in 2018
- Established a **leadership team of state agency “Resilience Coordinators”** to drive implementation
- **20 municipalities are participating** in the Municipal Resilience Program
- Increased municipal capacity through a **“Regional Resilience Coordinator” pilot** on Aquidneck Island



Resilient Rhody – Progress Assessment



Coordination, Process, and Tools

Now is the time to invest in priority projects and reinforce partnerships between the state and municipalities to empower and prepare communities for a new climate reality.



Critical Infrastructure & Utilities

Critical aspects of Rhode Island's infrastructure and utilities are at increased risk due to the impacts of climate change.



STATE AGENCY RESILIENCE COORDINATORS

All member agencies of the Executive Climate Change Coordinating Council, or EC4, have an appointed Resilience Coordinator. The Resilience Coordinators help originate and champion resiliency-related initiatives within their respective agencies and share progress toward *Resilient Rhody's* goals with one another. This interagency collaboration is essential to building strong partnerships as Rhode Island's state agencies work toward a more climate resilient future.



AQUIDNECK ISLAND REGIONAL RESILIENCE COORDINATOR

All Aquidneck Island municipalities—Newport, Middletown, and Portsmouth—have identified limited staff capacity and technical expertise as a barrier to advancing climate resilience. In response, the Rhode Island Infrastructure Bank (RIIB) will launch a pilot "Regional Resilience Coordinator" position in early 2022 to provide dedicated technical assistance to Aquidneck Island municipalities to implement climate resiliency investments. The position will serve as a statewide model for regional collaboration. This two-year pilot position is made possible with the support of the van Beuren Charitable Foundation.



PREP-RI PROGRAM

The University of Rhode Island Coastal Resource Center introduced the Providing Resilience Education for Planning (PREP-RI) program in 2018 to help coastal communities plan for increased storm and flooding intensity and accelerating sea level rise. Initially a set of education modules, PREP-RI now encompasses a diverse portfolio of tools and technical assistance examples that coastal communities, business, and leaders can use to act today and plan for tomorrow.



COASTAL HAZARD APPLICATION PROCESS

The Coastal Hazard Application Worksheet and Viewer is used to notify applicants seeking permits from the Coastal Resources Management Council (CRMC) of potential coastal hazards, such as sea level rise and shoreline erosion, that should be considered when planning shoreline development. The CRMC's goal is to increase understanding and awareness of these hazards among the development community with the intent of guiding development away from vulnerable areas.



The Municipal Resilience Program workshops bring communities together to identify local resilience challenges and needs. The Regional Resilience Coordinator will build on this work, ensuring implementation of actions.

| CRMC COASTAL HAZARD APPLICATION WORKSHEET | | | | | | | | | |
|---|-----------------|-----------------|--------------|----------------|---------------|----------------|--------------|------------------|-------------|
| PROJECT SITE DETAILS | | | | | | | | | |
| PROJECT NAME | PROJECT ADDRESS | PROJECT CONTACT | PROJECT TYPE | PROJECT STATUS | PROJECT PHASE | PROJECT PERMIT | PROJECT DATE | PROJECT LOCATION | PROJECT MAP |
| | | | | | | | | | |

CRMC's Coastal Hazard Application Worksheet, developed as an outcome of the Shoreline Change Special Area Management Plan (SCAMP).



Warren Wastewater Treatment Facility - the first to incorporate flood protection measures identified in RI Department of Environmental Management's 2017 climate change vulnerability assessment.



Stateville Public Supply Project - North Smithfield Drinking Water Main Extension.

PLANNING AND DESIGNING FOR MUNICIPAL WASTEWATER COLLECTION AND TREATMENT INFRASTRUCTURE

Many of Rhode Island's wastewater treatment facilities and infrastructure are located within riverine or coastal floodplains. To increase resiliency, the Rhode Island Department of Environmental Management (RIDEM) is leading efforts to incorporate climate change considerations into wastewater system planning and operations. In 2017, RIDEM published its *Implications of Climate Change for RI Wastewater Collection & Treatment Infrastructure* report, which included vulnerability assessments of all major treatment plants and identified adaptation measures. The Department subsequently released a planning and design guidance for municipal wastewater systems. In 2019, 14 of the 18 approved projects that received grants from RIDEM's newly established Wastewater Treatment Facility Resilience Fund were fully or partially identified in the 2017 study.

DRINKING WATER STATE REVOLVING FUND SMALL WATER SYSTEM ENGAGEMENT

The Rhode Island Department of Health (RIDOH) and RIIB proactively engage small water systems serving fewer than 10,000 customers. Engagement is intended to increase the technical, managerial, and financial capacity of small water systems to ensure their operational capability in perpetuity and to identify projects eligible for funding through the Drinking Water State Revolving Fund (DWSRF) that improve supply, treatment, or transmission infrastructure. RIDOH and RIIB also emphasize increasing system resiliency to extreme weather impacts by accelerating improvements like the installation of emergency generators or renewable energy projects. These investments in small water systems are essential to ensuring Rhode Island customers have access to safe drinking water during all operational circumstances.

RIPTA RENEWABLE ENERGY SOLAR FARM COLLABORATION

RIPTA announced its remote net energy agreement with Kearsarge Energy in March 2021. Under the agreement, RIPTA will purchase energy credits from Kearsarge Energy's solar installation on a former brownfield in East Providence. Purchasing energy credits will save RIPTA an estimated \$250,000/year in electricity costs and aligns with the agency's broader steps to adopt clean energy within its operations.

Sample page from report

Critical Infrastructure

- **Planning and designing for resilient wastewater and drinking water treatment facilities**
 - RIDEM implementing its *Implications of Climate Change for RI Wastewater Collection & Treatment Infrastructure report*
- **CRMC Coastal Hazard Application Process**
 - Applicant notification of hazards during permitting
- **Establishment of OER Microgrid Program**
- **RIPTA Zero Emissions Vehicle Program**
 - Facilitating the purchase of 14 new battery-electric busses
- **RIDOT Road-Stream Crossing Design Manual**
 - Establishes climate change and resiliency criteria and standards focused on the design of safer, cost-effective stream crossings



Woonsocket Drinking Water Plant opening

Natural Systems

- **RIDEM has helped preserve 1,424 acres since strategy release**
 - Awarded \$8.55 million in grants to municipalities, land trusts, and non-profits for land conservation
- **CRMC established the Shoreline Adaptation Inventory and Design Program**
 - Launched in 2019, CRMC and its partners are inventorying potential sites and designing new shoreline adaptation projects that yield natural systems benefits
- **Passage of the Forest Conservation Act**
 - Establishes a Forest Conservation Commission to inventory the state's forestland, develop stronger tools and incentives for forest conservation, expand urban and community forestry, and grow the state's forest products industry



Walker Farm, Barrington

Emergency Preparedness

- **Statewide evacuation route reassessment**
 - Local emergency managers completed a reassessment of evacuation routes in August 2021 to ensure the routes and signage accurately reflect changes to the road network
- **39 of 39 municipalities have Hazard Mitigation Plans approved or currently in approval process**
 - RIEMA is working with all municipalities to ensure compliance with Hazard Mitigation Plans
- **Small Business Risk Reduction Project**
 - Division of Statewide Planning used \$375,000 in U.S. Department of Housing and Urban Development (HUD) Disaster Relief Funds to identify areas most impacted by extreme weather events and assess how well local small businesses are prepared for extreme storm impacts



Community Health and Resilience

- **Urban Forests for Climate and Health Program**

- The state received a \$650,000 grant to develop a first-in-the-nation mapping methodology for Tree Equity
- The Pawtucket and Central Falls Health Equity Zone received a \$100,000 Tree Planting grant in 2021

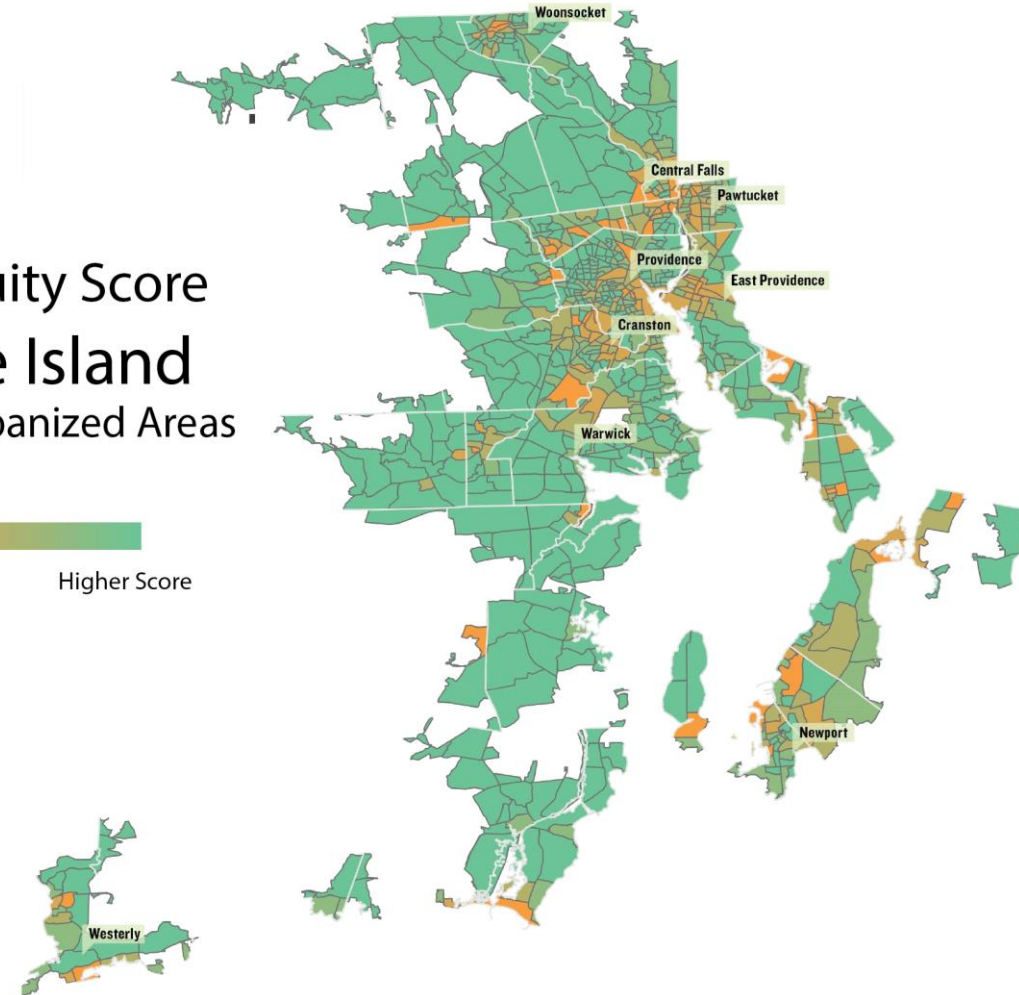
- **RIDOH Health Equity Zones integrated climate change resilience into community assessments**

- RIDOH Climate Change and Health Program worked with the Newport, Olneyville, and Pawtucket Central Falls Health Equity Zones to complete community assessments focused on climate change resilience

- **Rhode Island Heat Watch Program**

- RIDOH and RIDEM collaborated on this mapping project to measure daytime and nighttime ambient air temperature and humidity levels across Central Falls, East Providence, Pawtucket, and Providence

Tree Equity Score
Rhode Island
All State Urbanized Areas



Resilient Rhody → Municipal Resilience Program



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Resilient Rhody:

- Resilient Rhody established key **climate resilience focus areas**
- **61 established goals**
- **Recognized need to support municipalities** in prioritizing local resilience actions to further these goals

Municipal Resilience Program Development:

- **MRP identifies and advances local priority resilience actions** that support the 61 statewide goals
- **Rhode Island Infrastructure Bank** manages the MRP and **Action Grants & The Nature Conservancy** leads Community Resilience Building workshops
- **Open to all 39 municipalities** in RI

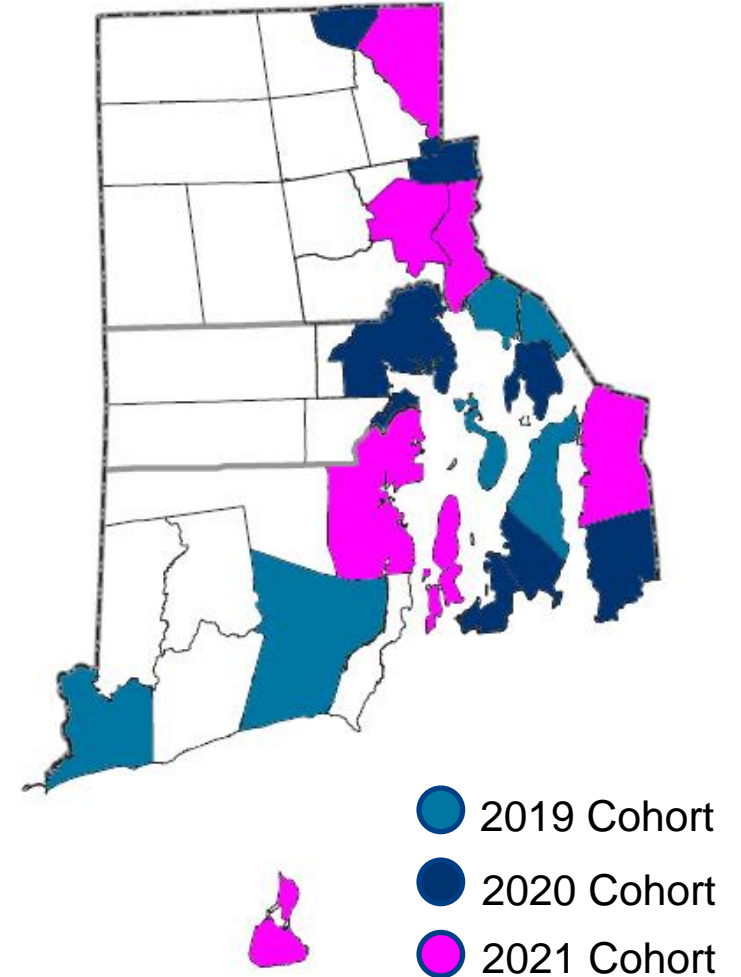
MRP Progress To Date

Projects Identified in Workshops:

- **MRP 2019** → 5 municipalities; 52 Projects totaling **~\$14mm in need**
- **MRP 2020** → 8 municipalities; 151 Projects totaling **~\$80mm in need**
- **MRP 2021** → 7 municipalities; Number of Projects TBD

Projects Implemented:

- To date, RIIB has committed **\$2.5mm in MRP Action Grant funding, covering 22 resilience projects**
- The MRP has also catalyzed **over \$6mm in external funding sources to support 8 MRP identified projects**



MRP Progress To Date

Additional Program Funding:

- MRP received \$7mm from the 2021 Beaches, Clean Water and Green Economy Bond
- RIIB submitted a proposal for American Rescue Plan Act funds to further capitalize the program
- MRP received \$200k in funding to establish an Aquidneck Island Regional Resilience Coordinator position
- Awaiting response on two funding proposals to support program administration:
 - FEMA's Building Resilient Infrastructure and Communities (BRIC) program
 - National Fish and Wildlife Foundation's National Coastal Resilience Fund



Wetland restoration, Bristol



Melville Dam, Portsmouth

Municipal Resilience Program - Vision

3 key areas of programmatic growth:

1. **Expanding the MRP to all 39 municipalities** (ex. increasing inland municipality engagement, increasing collaborative engagement between municipalities, etc.)
2. **Expanding the breadth of technical assistance the MRP can offer** (ex. including design & engineering assistance, identification of additional funding & financing sources, etc.)
3. **Expanding local capacity for resilience building** (ex. increasing staff & support for regional resilience efforts, providing training to existing staff as needed to increase local capacity, etc.)

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